

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of forming a trench isolation structure, comprising:

providing a substrate having a trench;

forming a polysilicon liner in said trench; and

forming a spin-on glass ~~dielectric layer~~ in said trench upon said polysilicon liner.

2. (Original) The method of claim 1, wherein said polysilicon liner has a thickness of about 50-150 angstroms.

3. (Cancelled)

4. (Currently Amended) The method of claim 1, wherein said step of forming said dielectric layer comprises:

coating a said spin-on glass over said substrate;

performing a chemical mechanical polishing on said spin-on glass;

annealing said spin-on glass; and

etching back said spin-on glass to form a recess.

5. (Original) The method of claim 4, wherein said polysilicon liner is converted into an oxide layer during said annealing step.

6. (Original) The method of claim 4, further comprising a step of baking said spin-on glass after said coating step.

7. (Original) The method of claim 4, further comprising a step of forming a filled dielectric layer in said recess upon said spin-on glass.

8. (Original) The method of claim 7, wherein said filled dielectric layer comprises a high density plasma (HDP) oxide layer.

9. (Original) A method of forming a trench isolation structure, comprising:
providing a substrate having a trench;
forming a polysilicon liner in said trench;
forming a spin-on glass in said trench upon said polysilicon liner; and
annealing said spin-on glass.

10. (Original) The method of claim 9, wherein said polysilicon liner has a thickness of about 50-150 angstroms.

11. (Original) The method of claim 9, wherein said polysilicon liner is converted into an oxide layer during said annealing step.

12. (Original) The method of claim 9, wherein said step of forming said spin-on glass comprises:

coating said spin-on glass over said substrate;
baking said spin-on glass;
performing a chemical mechanical polishing on said spin-on glass; and
etching back said spin-on glass to form a recess.

13. (Original) The method of claim 12, further comprising a step of forming a filled dielectric layer in said recess upon said spin-on glass.

14. (Original) The method of claim 13, wherein said filled dielectric layer comprises a high density plasma oxide layer.

15-17. (Cancelled)

18. (New) A method of forming a trench isolation structure, comprising:
providing a substrate having a trench;
forming a polysilicon liner in said trench;
forming a dielectric layer in said trench upon said polysilicon liner; and
baking said dielectric layer.

19. (New) The method of claim 18, wherein said polysilicon liner has a thickness of about 50-150 angstroms.

20. (New) The method of claim 18, further comprising steps of:
performing a chemical mechanical polishing on said dielectric layer; and
etching back said dielectric layer to form a recess.

21. (New) The method of claim 18, further comprising a step of annealing said polysilicon liner to be an oxide layer.

22. (New) The method of claim 20, further comprising a step of forming a filled dielectric layer in said recess upon said dielectric layer.

23. (New) The method of claim 22, wherein said filled dielectric layer comprises a high density plasma oxide layer.